

### Innovation for Low Earth Orbit

The TA1295 is a S-Band PA circuit card, designed for low earth space applications. Built to the stringent requirements of the CubeSat industry, it provides 2.5W of linear power (3.2W PSat) and is micro-processor controlled. The TA1295 has been engineered to support any signal type, from simple CW/FM signals to complex, highly modulated carriers such as 32APSK.

## TA1295

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## TA1295 FEATURES

- Forward output power detection
- Phase Noise, Spurious / Harmonic Performance suitable for LEO RF communications links
- Low DC current draw for power sensitive applications
- UART communications for RF output power, DC current draw, and temperature reporting
- UART controllable on/off control and thermal shut-off thresholds



## CHARACTERISTICS/SPECIFICATIONS

### TX RF Performance Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Operating Frequency	2000	—	2500	MHz	
P1dB Power Output	—	34	—	dBm	
Psat Power Output	—	35	—	dBm	
Linear Gain	27	—	28.5	dB	
Gain @ Psat	24	—	25.5	dB	
CW Input Power to drive to PSat	—	+12	—	dBm	
Gain Flatness (Peak to Peak)	—	1.5	2	dB	
Temperature dependant gain fluctuation	—	—	1	dB	Gain shall change no more than 1 dB over operating temperature range
Input Return Loss	—	—	-15	dB	
Operating Voltage	6.5	7	9	VDC	
Operating Current	—	2.3	3	A	@ 7V Input
Quiescent Current (Enabled)	—	1	—	A	@ 7V Input
Quiescent Current (Disabled)	—	—	10	mA	@ 7V Input
Maximum Input Power	—	+16	—	dBm	100% Duty Cycle, CW
2nd Harmonic	—	—	-60	dB	
3rd Harmonic	—	—	-60	dB	

### SSPA On/Off Control

Parameter	Min.	Typ.	Max	Unit	Notes
On/Off Control pin switching PA to Enabled (High)	—	+5	—	VDC	5V TTL Levels
On/Off Control pin switching PA to Disabled (Low)	—	0	—	VDC	5V TTL Levels
Switching Speed	—	—	1	S	From time of TTL High to RF output

### Environmental Specifications

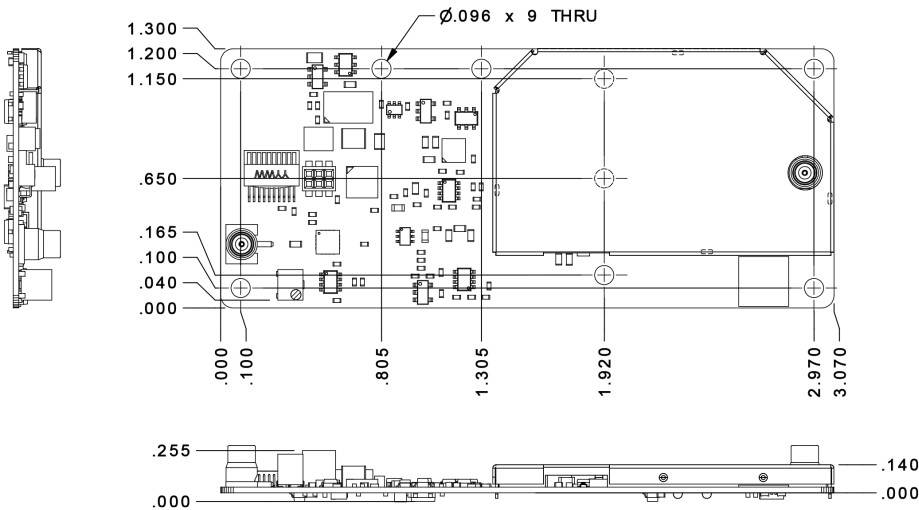
Parameter	Min.	Typ.	Max	Unit	Notes
Operating Temperature	-40	—	+85	°C	
PA Shut-off Temperature	—	+95	—	°C	
Cooling	Baseplate Conduction			—	
Humidity	0	—	95	%	
Shock / Vibration	MIL-STD-810			—	



### Mechanical Specifications

Parameter	Value	Unit	Notes
Dimensions	3.075 x 1.305 x 0.15 (78.11 x 33.15 x 3.81)	in (mm)	L x W x H. Height measured from bottom of board to top of shield
RF Connectors - Antenna	MMCX -F	Connector Type	Mating Connector Type: MMCX -M
DC/Control Connector	Omnetics PZN A79643-001	Part Number	Mating Connector PN: Omnetics A79640-001
Mounting	2-56 Through Holes	—	See Mechanical Drawing Below
Weight	0.5 (14.17)	oz (g)	

### MECHANICAL DRAWING



## DC/CONTROL CONNECTORS

### DC Connector (Omnetics PN: PZN A79643-001)

Pin	Description	Type	I/O	Notes
1	ON/OFF	Input	Input	High = Enabled, Low = Disabled
2	UART	Digital	Output	uP Interface (TX)
3	UART	Digital	Input	uP Interface (RX)
4	GND	Power	Input	Ground
5	GND	Power	Input	Ground
6	GND	Power	Input	Ground
7	GND	Power	Input	Ground
8	GND	Power	Input	Ground
9	GND	Power	Input	Ground
10	GND	Power	Input	Ground
11	+VDC	Power	Input	Supply Voltage
12	+VDC	Power	Input	Supply Voltage
13	+VDC	Power	Input	Supply Voltage
14	+VDC	Power	Input	Supply Voltage
15	+VDC	Power	Input	Supply Voltage
16	+VDC	Power	Input	Supply Voltage
17	+VDC	Power	Input	Supply Voltage
18	+VDC	Power	Input	Supply Voltage
19	GND	Power	Input	Ground
20	GND	Power	Input	Ground

## CABLE OPTIONS

For available cable options, please [contact us](#) for inquiries and pricing.

